January 7, 2004

TO: Lisa Beutler
Lloyd Fryer
Kamyar Guivetchi
John Herrick

FROM: Alex Hildebrand

RE: Chapter 1

Lloyd's rewording of Chapter 1 is a big improvement.

The chapter is still seriously inadequate in presenting and explaining the water needs and measures which it states will "assure an adequate, reliable, and sustainable supply of water of suitable quality for all beneficial uses to the year 2030."

1) Finding no.10 says 2 to 3 million acre-feet will be needed "for projected population growth of 12 million more Californians." How was this derived? Does this relate only to increased urban need? Is this an increased need for consumptive use? Is it a net increase in applied water that will not be recaptured and reused before being lost to a salt sink? Does it include water reallocated from farm use or recovered after being used to increase fish flows? How was it derived and how does it relate to the need for an increase in the developed water supply?

2) The finding also states that 0.5 to 1.0 million acre-feet will be needed "for meeting environmental water objectives." How much of this is increased consumptive use by wetlands and riparian vegetation outside of the Delta? Does it include the consumptive use for wetlands in the Delta that replace farmlands? Is the consequent reallocation of water from farm use to wetland use then shown as a reduction in the farm water supply that is assumed to be available for the state's production of farm products? How much water is assumed to be needed for increased stream flow? Will that increased stream flow go to the ocean as an increased Delta outflow requirement, or will it be recovered and reused, and if so for what purpose?

3) The finding says that "agricultural water use will stabilize at about the 2000 level." How was this conclusion derived? The Plan assumes further reallocations of ag water to other uses. How does it avoid reducing ag water below the 2000 level? Does it assume that 17 million more people will not need more food and fiber, or that we cannot produce it and will therefore not have it, or that we will import it, or that we can produce it without an increase in the developed water supply that is used to produce it? Where is the evidence that it is scientifically possible to produce 50% more food and fiber

per acre-foot of water? Is the increase alleged to be in dollar yield per acre-foot of water or in nutritional value per acre-foot of water? Are we talking about applied use of water or consumptive use of water? If we are talking about applied use, how much water is now applied in excess of consumptive and irrecoverable losses that is not now recaptured and reused? Is there any credible scientific evidence that it will become possible for a crop plant to produce a pound of biomass with any significant reduction in water consumed by the plant? A recent article by Letey and Birkle (U.C. Riverside) estimated that the consumptive use of water needed per person to produce food is 708 gallons per day or 0.75 acre-feet per year. The professor who spoke to the AC about deficit irrigation explained that although we may increase the edible portion of crop biomass, we cannot expect to produce more crop biomass per acre-foot of water consumed.

Conclusion

The chapter does not explain and derive how much new developed water will be needed for each purpose of use and the interrelation between these needs. Until it does so, it does not substantiate the opening statement that the Plan, if implemented, will "assure an adequate, reliable, and sustainable supply of water of suitable quality for all beneficial uses to the year 2030."